

The opinion in support of the decision being entered today was *not* written for publication and is *not* precedent of the Board.

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MAHER Y. ELSHEIKH and BIN CHEN

Appeal No. 2001-1105
Application No. 09/312,267

ON BRIEF

Before PAK, OWENS, and PAWLIKOWSKI, *Administrative Patent Judges*.
OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal is from the final rejection of claims 2-4, which are all of the claims remaining in the application. In the examiner's answer (page 2) the examiner states that claim 3 is objected to as being dependent upon a rejected claim, but would be allowable if rewritten in independent form including all of the limitations of the claim from which it depends. Hence, the claims before us are claims 2 and 4.

THE INVENTION

The appellants' claimed invention is directed toward a process for making 1,1,1,3,3-pentafluoropropane. Claim 4 is illustrative:

4. A gas phase process for preparing readily recoverable 1,1,1,3,3-pentafluoropropane which comprises (a) contacting 1,1,1,-trifluoro-3-chloro-propene with hydrogen fluoride in the presence of a supported antimony halide catalyst under conditions sufficient to achieve at least about 95% conversion of said 1,1,1-trifluoro-3-chloro-2-propene; and (b) recovering 1,1,1,3,3-pentafluoropropane from the resulting reaction mixture.

THE REFERENCES

Boyce et al. (Boyce)	5,616,819	Apr. 1, 1997
Tatsuo et al. (Tatsuo) ¹ (PCT application)	WO 97/24307	Jul. 10, 1997

THE REJECTION

Claims 2 and 4 stand rejected under 35 U.S.C. § 103 as being unpatentable over Boyce in view of Tatsuo.

OPINION

We reverse the aforementioned rejection. We need to address only claim 4, which is the sole independent claim.

¹ Citations herein to Tatsuo are to the English translation thereof which is of record.

Boyce discloses a liquid phase process for converting a chlorofluoro olefin to a fluorinated aliphatic hydrocarbon (col. 1, lines 66-67; col. 3, lines 31-36). In Example 1b(ii), 1-chloro-3,3,3-trifluoropropene is converted to 1,1,1,3,3-pentafluoropropane by reaction with hydrogen fluoride in the presence of an unsupported $\text{SbCl}_5/\text{TiCl}_4$ catalyst. In this example Boyce states that "[a]n average of 131 g (95%) of 1,1,1,3,3-pentafluoropropane was isolated for each of 2 consecutive runs" (col. 7, lines 6-7).

The examiner argues that "Boyce et al disclose every limitation of the instantly claimed process except for the requirement for a catalyst support" (answer, page 4). The examiner, however, does not point out where Boyce discloses that the conversion of the chlorofluoro olefin to the fluorinated aliphatic hydrocarbon can take place in the gas phase. Boyce teaches that the first step of his process, wherein a chlorofluoro olefin is made from a chlorinated olefinic hydrocarbon, can be carried out in either the liquid phase or the gas phase (col. 3, lines 13-16). The conversion of the chlorofluoro olefin to a fluorinated aliphatic hydrocarbon, which is the reaction in example 1b(ii), is disclosed as being carried out in the liquid phase (col. 3, lines 33-36).

As for the requirement in the appellants' claim 4 of a supported antimony halide catalyst, the examiner argues that "Tatsuo discloses a process including reacting 1,1,1-trifluoro-3-chloro-2-propene with hydrogen fluoride to produce 1,1,1,3,3-pentafluoropropane (page 10 of the translation) in the presence of supported catalysts including antimony (page 11 of the translation)" (answer, page 5). However, we do not find on page 11 or elsewhere in the translation a disclosure of a supported antimony catalyst. Tatsuo teaches that the catalyst can be "a carried catalyst obtained by carrying at least 1 element selected from Cr, Zn, Ti, V, Zr, Mo, Ge, Sn and Pb on fluorinated alumina" (page 11). None of these elements is antimony (Sb).

For the above reasons, we find that the examiner has not set forth a factual basis which is sufficient to support a conclusion of *prima facie* obviousness of the process recited in the appellants' claim 4. Accordingly, we reverse the rejection of this claim and claim 2 which depends therefrom.

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DECISION

The rejection of claims 2 and 4 under 35 U.S.C. § 103 over
Boyce in view of Tatsuo is reversed.

REVERSED

CHUNG K. PAK)	
Administrative Patent Judge)	
)	
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)	BOARD OF PATENT
TERRY J. OWENS)	
Administrative Patent Judge)	APPEALS AND
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)	INTERFERENCES
)	
BEVERLY A. PAWLIKOWSKI)	
Administrative Patent Judge)	

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